

**4th NASA GRC Propulsion Control and Diagnostics (PCD) Workshop
December 11 - 12, 2013, Cleveland, Ohio**

Agenda

December 11

- 7:30-8:00 Registration
- 8:00-8:30 Welcome, Introductions, Agenda and Logistics - [Sanjay Garg](#) (GRC)
- 8:30-9:10 NASA Aeronautics Programs - [Sanjay Garg](#) (GRC)
- 9:10-10:00 Session 1: High Speed Propulsion Modeling and Control - [Tom Stueber](#)
- 9:10 Overview - [Tom Stueber](#)
 - 9:20 CCE-LIMX Mode Transition Modeling and Control - [Tom Stueber](#)
 - 9:40 Dynamic Modeling of Supersonic Propulsion Systems for Aero-Propulso-Servo-Elasticity Analysis - [George Kopasakis](#)
- 10:00-10:20 Break - Coffee Service
- 10:20-12:00 Session 2: Enhanced Engine Control - [Dr. Ten-Huei Guo](#)
- 10:20 Overview - [Ten-Huei Guo](#)
 - 10:30 C-MAPSS40k V2.0 Overview and Update - [Jeff Chapman](#)
 - 10:50 Controller Design for Enhanced Engine Response - [James Liu](#)
 - 11:15 Using Propulsion System for Loss of Control Prevention and Mitigation - [Jonathan Litt](#)
 - 11:40 Engine Icing Effects Modeling, Detection and Accommodation - [Ryan May](#)
- 12:00-1:00 Lunch
- 1:00-3:00 Session 3: Model-Based Control and Diagnostics - [Don Simon](#)
- 1:00 Overview - [Don Simon](#)
 - 1:10 Propulsion Diagnostic Method Evaluation Strategy (ProDiMES): Public Benchmarking Results - [Don Simon](#)
 - 1:30 Vehicle Integrated Propulsion Research (VIPR) Engine Testing - [John Lekki](#)
 - 1:50 VIPR Gas Path Diagnostics Results - [Don Simon](#)
 - 2:10 Model-Based Engine Control Using Optimal Tuner Based Model - [Joe Connolly](#)
 - 2:35 Mechanical Components Diagnostics Research - [Kelsen LaBerge](#)
- 3:00-3:20 Break - Coffee Service with Snack
- 3:20-5:30 Session 4: Distributed Engine Control - [Dennis Culley](#)
- 3:20 Distributed Engine Control Overview - [Dennis Culley](#)
 - 3:40 Modeling Control Elements With an Outlook Toward Hardware-in-the-Loop (HIL) Operation - [Alicia Zinnecker](#)
 - 4:00 Decentralized Engine Control System Simulator - [John McArthur](#)
 - 4:20 HIL System Integration - [Eliot Aretskin-Hariton](#)
 - 4:40 Power-Line Data Communication in High Temperature Environments - [Larry Greer](#)
 - 5:00 High Temperature SiC Electronics: Update and Outlook - [Glenn Beheim](#)
- 5:30-7:30 Reception & Poster Session - Software and Industry/Academia Partners; Snacks with Soft Drinks

December 12

- 8:00-8:10 Welcome Back and Logistics - [Sanjay Garg](#) (GRC)
- 8:10-9:20 Industry perspective on PCD Research
Panel: [Bill Mailander](#) (GE Aviation), Grant Gordon (Honeywell), [Bruce Wood](#) (P&W), [Keith Calhoun](#) (Rolls-Royce) and [James Urnes](#) (Boeing)
- 9:20-10:20 DoD Perspective on PCD Research
Panel: [Al Behabhani](#) (AFRL), [Bert Smith](#) (AATD), [Jessica Lafond](#) (NAVAIR)
- 10:20-10:40 Break - Coffee Service
- 10:40-12:00 Session 5: Active Combustion Control - [Tom Stueber](#)
10:40 Overview - [Tom Stueber](#)
10:50 Combustion Process Instability Issues Being Addressed - [Clarence Chang](#)
11:10 Fuel Flow Modulator Characterization Facility - Overview and Operation - [Randy Thomas](#)
11:35 Next Generation Fuel Modulators for Combustion Pilot Fuel Modulation - [Joe Saus](#)
- 12:00-1:00 Lunch
- 1:00-2:20 Session 6: Dynamic Modeling and Systems Analysis - [Jeff Csank](#)
1:00 Overview - [Jeff Csank](#)
1:05 Dynamic Systems Analysis - [Jeff Csank](#)
1:30 T-MATS (Toolbox for the Modeling and Analysis of Thermodynamic Systems) - [Jeff Chapman](#)
1:55 Reducing Conservatism in Aircraft Engine Response Using Conditionally Active Min-Max Regulators - [Ryan May](#)
- 2:20-3:00 Review & Discussion - All
- 3:20-5:00 One-on-One Meetings with Task Leads

